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MSc Thesis Synopsis:

Web Based System for Laboratory Results Lookup via Internet

The goal of the thesis is to develop a web-based interface to a database with laboratory test results and to integrate with already existing laboratory information system (LIS) - “Multilab”, developed by “Gammaconsult Ltd.”. In addition the current work also aims to research the global experience in software development and application of the best practices in the field of LIS. By presenting a fully operational sample as well as by thorough analysis it will attempt to lay down a direction for application of the e-health concepts in Bulgaria.

In today’s dynamic world it becomes more and more apparent the need of 24 hours a day, 7 days in the week, full time availability of all sorts of organizations, especially for those health-care related companies and establishments. Slowly but surely a new yet unpopular term makes its way in our every day life – electronic health (E-Health).

According to the most contemporary understandings E-Health is a term which practically consists of a complete set of measures based on organizational, technological and legal models that spread over and include each aspect of health care. It is reasonable thus expected that together with the introduction of e-health there will be observed an increase in quality of health services as well as better and more effective management of the available financial resources. Apparently this is a perspective sphere which will benefit from the interaction between the present-day information and communication technologies on one side and medical informatics and public health services on the other.

Laboratory information systems are a class of software which is involved in collection, arrangement and storage of data as a result of medic-laboratory processes. In addition the “Multilab” LIS system is developed to carry out automatic management of activities, related to the process of registration, control and determination of expenses of the various clinical services. This way the system contributes to the automated build up of electronic patient record and to the optimal usage of resources within hospital sections.

In its capacity of web-based system the application allows remote access to data. This means that avoiding unnecessary waste of time, without the need of any installation on the client side, the end user is able to easily and quickly gain access to the necessary information.

The implementation of the system is based on three-tier application architecture, and the modern technologies and tools used in the process of development: .NET Framework, ASP.NET 2.0 и Microsoft SQL Server 2005, allow the achievement of very good balance between component based approach for rapid application development (RAD) on one hand and excellent performance characteristics on the other. It is not of less importance that these contemporary technologies allow rapid and easy deployment, aid scalability and supportability and last but not least – provide cross-platform compatibility.

Access to information anywhere and anytime, even using mobile office and portable devices; no installation; end user platform and operating system independency; support of only one machine due to the fact that the web application is deployed on a single site instead of being installed on thousands of computers. These are the main benefits of the data access via Internet.